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7. APPENDICES

Appendix 1. Quality Requirements of Wine Based on SNI 01-4018-1996.

Table 7. Requirement of Wine Based on SNI 01-4018-1996

No.	Attributes	Unit	Requirements
1.	Aroma and taste		Normal
2.	Ethyl alcohol	%v/v	8-20
3.	Methyl alcohol	%v/v	Max. 0.1
4.	Volatile acid (acetate acid)	Absolute Alcohol g/100 ml	Max. 0.2
5.	Food Additives		
	a. Coloring agent		SNI 01-0222-1987
	b. SO_2		
	c. Sweetening agent		Negative
6.	Metal Contamination	mg/kg	
	a. Lead (Pb)		Max. 0.2
	b. Cuprum (Cu)		Max. 2.0
	c. Zinc (Zn)		Max. 2.0
	d. Mercuri (Hg)		Max. 0.03
	e. Tin (Sn)		Max. 40.0
7.	Arsen contamination	mg/kg	Max. 0.1
8.	Microbial contamination		
	a. Total Plate Count	Coloni/ml	Max. 2×10^2
	b. *Coliform* microbial	APM/ml	Max. 20
	c. *Escherichia coli*	APM/ml	< 3
	d. *Salmonella sp.*		Negative
	e. *Staphylococcus aureus*	Coloni/ml	0
	f. *Vibrio sp.*		-
	g. *Clostridium perfringens*		-
	h. Mould	Koloni/ml	Max. 50
	i. *Yeast*	Koloni/ml	Max. 50

Source: SNI 01-4018-1996

Appendix 2. Result of Ethanol and Methanol Analysis

UNIVERSITAS GADJAH MADA
LABORATORIUM PENELITIAN DAN PENGUJIAN TERPADU

Komite Akreditasi Nasional
Laboratorium Penguji
LP-359-IDN

RDP/5.10.01/LPPT
Rev. 1
Halaman 1 dari 1

LAPORAN HASIL UJI

No. Sertifikat : 00028.a/01/LPPT/I/2016
No. Pengujian: 16010100028

Informasi Customer

Nama : Lukas Terry Boedianto
Alamat : FTP UNIKA Semarang

Tanggal Penerimaan : 07 Januari 2016
Tanggal Pengujian : 07 Januari 2016

Hasil Pengujian

1. Wine Anggur (GW12)

Parameter Uji	Hasil	Satuan	Metode
Ethanol	11,66	%	IKU/5.4/GC-04

2. Wine Anggur (GW15)

Parameter Uji	Hasil	Satuan	Metode
Ethanol	12,00	%	IKU/5.4/GC-04

3. Wine Anggur (GW15S)

Parameter Uji	Hasil	Satuan	Metode
Ethanol	6,96	%	IKU/5.4/GC-04

Yogyakarta, 25 Januari 2016
Manajer Teknik,

Prof. Dr. Abdul Rohman, M.Si., Apt.
NIP.197701202005011002

UNIVERSITAS GADJAH MADA
LABORATORIUM PENELITIAN DAN PENGUJIAN TERPADU

RDP/5.10.01/LPPT
Rev. 1
Halaman 1 dari 1

LAPORAN HASIL UJI

No. Sertifikat : 00028.b/01/LPPT/I/2016
No. Pengujian : 16010100028

Informasi Customer

Nama : Lukas Terry Boedianto
Alamat : FTP UNIKA Semarang

Tanggal Penerimaan : 07 Januari 2016
Tanggal Pengujian : 07 Januari 2016

Hasil Pengujian

1. Wine Anggur (GW12)

Parameter Uji	Hasil	Satuan	Metode
Methanol	0,015	%	Kromatografi Gas

2. Wine Anggur (GW15)

Parameter Uji	Hasil	Satuan	Metode
Methanol	0,015	%	Kromatografi Gas

3. Wine Anggur (GW15S)

Parameter Uji	Hasil	Satuan	Metode
Methanol	0,02	%	Kromatografi Gas

Yogyakarta, 25 Januari 2016
Manajer Teknik

Prof. Dr. Abdul Rohman, M.Si., Apt.
NIP.197701202005011002

Appendix 3. Sensory Analysis

Worksheet Sensory Analysis

Date :

Sample : Grape Wine

Sample Clasification	**Code**
Grape wine 2012/ GW12	A
Grape wine 2015/ GW15	B
Grape wine 2015 without sugar/ GW15S	C

Sequence of Sample Code Combination

ABC = 1	ABC = 7
BCA = 2	BCA = 8
CAB = 3	CAB = 9
ABC = 4	ABC = 10
BCA = 5	BCA = 11
CAB = 6	CAB = 12

Sample Coding

Sample A	369 756 426 916 232 172 498 743 938 423 369 756
Sample B	862 822 414 933 731 624 986 459 869 128 862 822
Sample C	266 984 681 282 216 556 223 133 946 139 266 984

Booth

Panelists	Code Sequence	Sample Code		
1	ABC	369	862	266
2	BCA	822	984	756
3	CAB	681	426	414
4	ABC	916	933	282
5	BCA	731	216	232
6	CAB	556	172	624
7	ABC	498	986	223
8	BCA	459	133	743
9	CAB	946	938	869
10	ABC	423	128	139
11	BCA	369	862	266
12	CAB	822	84	756

UJI RANKING HEDONIK

Nama : Tanggal :
Produk : *Wine* Buah Anggur
Instruksi :
Di hadapan anda terdapat 3 sampel *wine* buah anggur. Untuk atribut warna dan kejernihan, anda dipersilakan untuk mengamati sampel *wine* buah anggur secara urut dari kiri ke kanan. Untuk atribut aroma, anda dipersilakan untuk mencium aroma sampel *wine* buah anggur secara urut dari kiri ke kanan. Untuk atribut rasa, cicipilah sampel secara urut dari kiri ke kanan. Setelah mencicipi setiap sampel, berkumurlah dan diamkan selama 10 detik agar mulut anda terasa netral kembali. Anda boleh mengulang sesering yang anda perlukan. Urutkan sampel dari yang paling anda sukai (= 3) hingga sampel yang paling kurang anda sukai (= 1). Nilai yang diberikan **tidak boleh ada yang *double*.**

Kode Sampel	**Atribut**				
	Warna	**Kejernihan**	**Aroma**	**Rasa**	***Overall***

Appendix 4. Statistical Analysis

Tests of Normality

	Sample	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
pH	GW12	.385	3	.	.750	3	.000
	GW15	.385	3	.	.750	3	.000
	GW15S	.385	3	.	.750	3	.000
Sugar_Content	GW12	.385	3	.	.750	3	.000
	GW15	.385	3	.	.750	3	.000
	GW15S	.253	3	.	.964	3	.637
Total_SO2	GW12	.191	3	.	.997	3	.897
	GW15	.385	3	.	.750	3	.000
	GW15S	.385	3	.	.750	3	.000
Total_Volatile_Acid	GW12	.385	3	.	.750	3	.000
	GW15	.385	3	.	.750	3	.000
	GW15S	.385	3	.	.750	3	.000
Zn_Metal	GW12	.385	3	.	.750	3	.000
	GW15	.385	3	.	.750	3	.000
	GW15S	.385	3	.	.750	3	.000
Antioxidant_Activity	GW12	.385	3	.	.750	3	.000
	GW15	.385	3	.	.750	3	.000
	GW15S	.310	3	.	.899	3	.381
Turbidity	GW12	.175	3	.	1.000	3	1.000
	GW15	.253	3	.	.964	3	.637
	GW15S	.292	3	.	.923	3	.463
L	GW12	.175	3	.	1.000	3	1.000
	GW15	.205	3	.	.993	3	.840
	GW15S	.265	3	.	.954	3	.587
A	GW12	.333	3	.	.862	3	.274
	GW15	.353	3	.	.824	3	.174
	GW15S	.253	3	.	.964	3	.637
B	GW12	.314	3	.	.893	3	.363
	GW15	.292	3	.	.923	3	.463
	GW15S	.297	3	.	.917	3	.443

a. Lilliefors Significance Correction

pH

Duncan[a]

Sample	N	Subset for alpha = 0.05		
		1	2	3
GW15	3	3.3933		
GW15S	3		3.4633	
GW12	3			3.4767
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Sugar_Content

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15S	3	5.7667	
GW12	3		21.2667
GW15	3		22.8667
Sig.		1.000	.055

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Total_SO2

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15	3	43.7333	
GW12	3	43.9333	
GW15S	3		56.5333
Sig.		.942	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Total_Volatile_Acid

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15	3	50.8000	
GW12	3	51.2000	
GW15S	3		186.3333
Sig.		.484	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Antioxidant_Activity

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15S	3	86.2167	
GW15	3	87.4767	
GW12	3		89.6100
Sig.		.085	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Zn_Metal

Duncan[a]

Sample	N	Subset for alpha = 0.05
		1
GW12	3	1.3333
GW15	3	1.3333
GW15S	3	1.3333
Sig.		1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

L

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15	3	13.6700	
GW15S	3		16.1567
GW12	3		16.6900
Sig.		1.000	.137

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Turbidity

Duncan[a]

Sample	N	Subset for alpha = 0.05		
		1	2	3
GW15S	3	119.6667		
GW12	3		127.0000	
GW15	3			134.6667
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

a

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW15	3	.6033	
GW12	3		.8400
GW15S	3		.8567
Sig.		1.000	.814

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

b

Duncan[a]

Sample	N	Subset for alpha = 0.05	
		1	2
GW12	3	2.0300	
GW15	3	2.2133	
GW15S	3		2.4033
Sig.		.055	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
pH	Between Groups	.012	2	.006	180.333	.000
	Within Groups	.000	6	.000		
	Total	.012	8			
Sugar_Content	Between Groups	535.220	2	267.610	26761.000	.000
	Within Groups	.060	6	.010		
	Total	535.280	8			
Total_SO2	Between Groups	322.640	2	161.320	15.526	.004
	Within Groups	62.340	6	10.390		
	Total	384.980	8			
Total_Volatile_Acid	Between Groups	36630.462	2	18315.231	42483.784	.000
	Within Groups	2.587	6	.431		
	Total	36633.049	8			
Zn_Metal	Between Groups	.000	2	.000	.000	1.000
	Within Groups	2.000	6	.333		
	Total	2.000	8			
Antioxidant_Activity	Between Groups	17.653	2	8.827	15.789	.004
	Within Groups	3.354	6	.559		
	Total	21.008	8			
Turbidity	Between Groups	337.556	2	168.778	66.043	.000
	Within Groups	15.333	6	2.556		
	Total	352.889	8			
L	Between Groups	15.588	2	7.794	53.910	.000
	Within Groups	.867	6	.145		
	Total	16.456	8			
a	Between Groups	.120	2	.060	8.701	.017
	Within Groups	.042	6	.007		
	Total	.162	8			
b	Between Groups	.209	2	.105	11.717	.008
	Within Groups	.054	6	.009		
	Total	.263	8			